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EXAMINER

COUGHLAN, PETER D

ART UNIT	PAPER NUMBER
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2129

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/725,378

Applicant(s)

FAN ET AL.

Examiner

Peter Coughlan

Art Unit

2129

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## Detailed Action

1. This office action is in response to an AMENDMENT entered November 29, 2006 for the patent application 10/725378 filed on December 3, 2003.
2. All previous Office Actions are fully incorporated into this Non-Final Office Action by reference.
3. The finality of the previous Office Action has been withdrawn.

### ***Status of Claims***

4. Claims 1-33 are pending.

### ***35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-33 are rejected under 35 U.S.C. 101 for nonstatutory subject matter.

The claims and specification recite preemption of applications for the invention.

Art Unit: 2129

Gottschalk v. Benson, 409 U.S. 63, 64 (1972); see also Flook, 437 U.S. at 593

("[R]espondent incorrectly assumes that if a process application implements a principle in some specific fashion, it automatically falls within the patentable subject matter of 101."). "Abstract ideas" are one type of subject matter that the Supreme Court has consistently held fall beyond the broad reaches of patentable subject matter under §101. As early as *Le Roy v. Tatham*, 55 U.S. 156 (1852), the Supreme Court explained that "[a] principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them exclusive right." *Id.* At 175. Since then the unpatentable nature of abstract ideas has repeatedly been confirmed. See, e.g., *Diehr*, 450 U.S. at 67; *Rubber Tip Pencil Co. v. Howard*, 87 U.S. 498, 507 (1874). The very cases of this court that recognized the patentability of some business methods have reaffirmed that abstract ideas are not patentable. See *AT&T*, 172 F.3d at 1355; *State Street Bank*, 149 F.3d 1373; see also *In re Alappat*, 33 F.3d 1526, 1542-43 (Fed. Cir. 1994) (en banc).

Paragraph 0006 of the application illustrates the invention is an abstract concept due to its many applications both known and unknown uses. Paragraph 0213 discloses numerous areas in which the invention can be employed thus indicating the invention falls within the domain of being an abstract concept. In addition paragraph 0213 recites both known and unknown applications thus the specification confirms preemption. In paragraph 0215, the specification affirms both the invention is an abstract concept and preemption. 'One of ordinary skill in the art, after having read the present application, would readily recognize that this commercial aspect could be implemented in a variety

Art Unit: 2129

of ways.' The ability of the invention 'could be implemented in a variety of ways' indicates the invention falls within the domain of an abstract concept. The phrase 'variety of ways' illustrates preemption.

Claims and/or the specification that describe an abstract concept or preemption of implementations of the invention are nonstatutory.

Claims 14-19 are rejected under 35 U.S.C. §101 by use of the term 'signal bearing media.' In ¶0206, the specification defines signal bearing media as 'including transmission media such as digital and analog communications.' Transmission media such as digital and analog communications are unable to store instructions.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-33 are rejected under 35 U.S.C. 102(a) (hereinafter referred to as **Fan**) being anticipated by Fan, 'Progressive Modeling'.

Art Unit: 2129

Claim 1

Fan anticipates dividing said dataset into a plurality of subsets of data (**Fan**, p164, C1:38 through C2:9); and developing an estimated learning model for said dataset by developing a learning model for a first subset of said plurality of subsets. (**Fan**, p163, C2:11-16; 'Learning model' of applicant is equivalent to 'progressive modeling' of **Fan**.)

Claim 2

Fan anticipates progressively forming an ensemble model of said dataset by sequentially developing a learning model for each of a successive one of said plurality of subsets (**Fan**, abstract, 'Learning model' of applicant is equivalent to 'learning algorithm' of **Fan**.), until a desired indication of termination has been reached. (**Fan**, p165, C2:31-41)

Claim 3

Fan anticipates developing at least one of a current accuracy and an estimated final accuracy, said current accuracy comprising an accuracy of said learning model for said first subset, said estimated final accuracy comprising an estimated accuracy of said estimated learning model for said dataset. (**Fan**, I163, C2:16 through p164, C1:13; 'First subset' of applicant is this example (due to progressive modeling) is 'intermediate models' of **Fan**.)

Claim 4

Fan anticipates developing at least one of a current accuracy and an estimated final accuracy, said current accuracy comprising an accuracy of said learning model for said subset being currently developed, said estimated final accuracy comprising an estimated accuracy of said ensemble model of said dataset. (**Fan**, I163, C2:16 through p164, C1:13; 'Subsets being currently developed' of applicant is equivalent to 'intermediate models' of Fan.)

Claim 5

Fan anticipates developing an estimated training time to complete development of said ensemble model. (**Fan**, p166, C1:10-13)

Claim 6

Fan anticipates each said example in said dataset carries a benefit and said accuracy comprises an overall accuracy that reflects an estimated total amount of reward from said benefits. (**Fan**, p163, C2:16 through p164, C1:13)

Claim 7

Fan anticipates said benefit is not equal for all said examples, said learning comprising a cost-sensitive learning, and said accuracy comprises an overall accuracy that reflects an estimated total amount of reward from said benefits in units of money.

Art Unit: 2129

(**Fan**, p163, C2:16 through p164, C1:13; 'Units of money' of applicant is equivalent to 'dollar amounts' of **Fan**.)

#### Claim 8

Fan anticipates a database divider for dividing said dataset into N subsets of data (**Fan**, p164, C1:38 through C2:9); and a base classifier calculator for developing a learning model for data in a first subset of said N subsets. (**Fan**, p163, C2:11-16, abstract; 'Learning model' of applicant is equivalent to 'progressive modeling' of **Fan**. 'Base classifier calculator' of applicant is equivalent to 'learning algorithm' of **Fan**.)

#### Claim 9

Fan anticipates an ensemble calculator for progressively developing an ensemble model of said database of examples by successively integrating a base classifier from successive subsets of said N subsets. (**Fan**, p166, algorithm 1; 'Ensemble calculator' of applicant is equivalent to the outer loop of the algorithm 1 which begins with 'partition S into K disjoint subsets'. This outer loop develops the 'ensemble model' with each additional  $S_i$ .)

#### Claim 10

Fan anticipates a memory interface to retrieve data from said database and to store data as said inductive learning model is progressively developed (**Fan**, p163, Figure 1; Illustrates a display of remaining training time and accuracy which is



Art Unit: 2129

equivalent to a 'learning model' being developed over time.); and a graphic user interface to allow a user to selectively enter parameters, to control the progressive development of said ensemble model, and to view results of said progressive development. (**Fan**, p164, C1:26-30 and p169, C2:17-34; 'Allow a user to selectively enter parameters' of applicant is implied by 'users have full control over the learning process' and 'user can easily experiment with different algorithms' of **Fan**.)

## Claim 11

**Fan** anticipates a memory containing one or more of a plurality of segments of said example data (**Fan**, p164, C1:38 through C2:9; 'Segments of said example data' of applicant is equivalent to 'subset' of **Fan**.), wherein each said segment of example data comprises data for calculating a base classifier for an ensemble model of said dataset; a base classifier calculator for developing a learning model for data in one of said N segments (**Fan**, abstract; 'Base classifier calculator' of applicant is equivalent to 'learning algorithm' of **Fan**.); an ensemble calculator for progressively developing an ensemble model of said database of examples by successively integrating a base classifier from successive ones of said N segments (**Fan**, p166, algorithm 1; 'Ensemble calculator' of applicant is equivalent to the outer loop of the algorithm 1 which begins with 'partition S into K disjoint subsets'. This outer loop develops the 'ensemble model' with each additional  $S_i$ .); a memory interface to retrieve data from said database and to store data as said inductive learning model is progressively developed (**Fan**, p163, Figure 1; Illustrates a display of remaining training time and accuracy which is

Art Unit: 2129

equivalent to a 'learning model' being developed over time.); and a graphic user interface to allow a user to at least one of enter parameters, to control the progressive development of said ensemble model, and at least one of display and printout results of said progressive development. (**Fan**, p164, C1:26-30 and p169, C2:17-34; 'Allow a user to selectively enter parameters' of applicant is implied by 'users have full control over the learning process' and 'user can easily experiment with different algorithms' of **Fan**.)

#### Claim 12

**Fan** anticipates providing a database of example data to be used to process an inductive learning model for said example data, wherein said inductive learning model is derivable by dividing said example data into N segments and using at least one of said N segments of example data to derive a base classifier model (**Fan**, p164, C1:38 through C2:9; 'Segments of said example data' of applicant is equivalent to 'subset' of **Fan**.); receiving said database of example data and executing said method of deriving said inductive learning model (**Fan**, p163, C2:11-16, p164, C1:38 through C2:9; 'Learning model' of applicant is equivalent to 'progressive modeling' of **Fan**. 'Example data' of applicant is equivalent to 'subset' of **Fan**.); providing an inductive learning model as derived (**Fan**, p163, C1:1 through C2:10); executing an application of an inductive learning model as derived; and receiving a result of said executing said application. (**Fan**, p163, Figure 1; 'Executing' and 'receiving a result' of applicant is equivalent to the output display of Figure 1. of **Fan**.)

Art Unit: 2129

Claim 13

Fan anticipates dividing said dataset into N subsets of data (**Fan**, p164, C1:38 through C2:9); and developing an estimated learning model for said dataset by developing a learning model for a first subset of said N subsets. (**Fan**, p163, C2:11-16; 'Learning model' of applicant is equivalent to 'progressive modeling' of Fan.)

Claim 14

Fan anticipates dividing said dataset into N subsets of data (**Fan**, p164, C1:38 through C2:9); and developing an estimated learning model for said dataset by developing a learning model for a first subset of said N subsets. (**Fan**, p163, C2:11-16; 'Learning model' of applicant is equivalent to 'progressive modeling' of Fan.)

Claim 15

Fan anticipates progressively forming an ensemble model of said dataset by sequentially developing a learning model for each of a successive one of said N subsets, until a desired indication of termination has been reached. (**Fan**, p166, algorithm 1; 'Ensemble calculator' of applicant is equivalent to the outer loop of the algorithm 1 which begins with 'partition S into K disjoint subsets'. This outer loop develops the 'ensemble model' with each additional  $S_i$ .)

Claim 16

Art Unit: 2129

Fan anticipates developing at least one of a current accuracy and an estimated final accuracy, said current accuracy comprising an accuracy of said learning model for said subset being currently developed, said estimated final accuracy comprising an estimated accuracy of said ensemble model of said dataset. (**Fan**, l163, C2:16 through p164, C1:13; 'Subsets being currently developed' of applicant is equivalent to 'intermediate models' of Fan.)

#### Claim 17

Fan anticipates developing an estimated training time to complete development of said ensemble model. (**Fan**, p166, C1:10-13)

#### Claim 18

Fan anticipates an overall accuracy that reflects an estimated total amount of reward from said benefits. (**Fan**, p163, C2:16 through p164, C1:13)

#### Claim 19

Fan anticipates said benefit is not equal for all said examples, said learning comprising a cost-sensitive learning, and said accuracy comprises an overall accuracy that reflects an estimated total amount of reward from said benefits in predetermined units. (**Fan**, p163, C2:16 through p164, C1:13; 'Predetermined units' of applicant is equivalent to 'dollar amounts' of Fan.)

Art Unit: 2129

Claim 20

Fan anticipates dividing said dataset into N subsets of data (**Fan**, p164, C1:38 through C2:9); and developing an estimated learning model for said dataset by developing a learning model for a first subset of said N subsets. (**Fan**, p163, C2:11-16; 'Learning model' of applicant is equivalent to 'progressive modeling' of Fan.)

Claim 21

Fan anticipates calculating an estimated accuracy for said leaning model. (**Fan**, p163, C2:17 through p164, C1:13)

Claim 22

Fan anticipates calculating a remaining training time. (**Fan**, p166, C1:10-13)

Claim 23

Fan anticipates progressively, and stepwise (**Fan**, p166, algorithm 1; 'Progressive and stepwise' of applicant is illustrated by the outcome of the 'while' loop of Fan.), forming an ensemble model of said dataset by sequentially using additional said subsets to develop an additional learning model for said subset (**Fan**, p166, algorithm 1; 'Additional said subsets' of applicant is equivalent to 'partition S into K subsets' of Fan.) and incorporating each said additional learning model into an aggregate model to form said ensemble model, wherein said progressive and stepwise forming can be terminated prior to developing an additional learning model for all of said N subsets.

Art Unit: 2129

(**Fan**, abstract, 'Terminated prior to developing an additional learning' of applicant is equivalent to 'user can terminate training prior to completion' of **Fan**.)

## Claim 24

**Fan** anticipates said examples carry potentially different benefits, said method further comprising: calculating an estimation of an accumulated benefit for said learning model. (**Fan**, p163, C2:16 through p164, C1:13; 'Accumulated benefit' of applicant is equivalent to 'benefit' of **Fan**.)

## Claim 25

**Fan** anticipates for a dataset comprising a plurality of elements (**Fan**, p164, C1:38 through C2:9; 'Plurality of elements' of applicant is equivalent to 'subsets  $S_j$ ' of **Fan**.), each said element comprising a feature vector (**Fan**, p166, C2:14 through p167 C1:10; 'Feature vector' of applicant is equivalent to 'datasets' of **Fan**.), said dataset further comprising a true class label for at least a portion of said plurality of elements, said true class labels allowing said dataset to be characterized as having a plurality of classes, dividing at least a part of said portion of said plurality of elements having said true class label into N segments of elements; and learning a model for elements in at least one of said N segments, as an estimate for a model for all of said dataset. (**Fan**, p166, C2:14 through p167 C1:10; 'True class' of applicant is equivalent if the feature is true or not of **Fan**. For example **Fan** illustrates 2 different elements which have a 'true' class. They are 'actual donate' and 'actual fraud'.)

Claim 26

Fan anticipates using a second part of said portion of said plurality of elements having said true class label as a validation set for said model. (**Fan**, p164, C1:38 to C2:9; 'Validation set' of applicant is equivalent to 'validation set  $S_v$ ' of Fan.)

Claim 27

Fan anticipates using said validation set to calculate a predicted accuracy for said model. (**Fan**, p165, C1:4-12; Fan illustrates an equation for determining probability which is equivalent to 'predicted accuracy' of applicant.)

Claim 28

Fan anticipates calculating an estimated training time for learning a model based on a remainder of said N segments. (**Fan**, p166, C1:10-13)

Claim 29

Fan anticipates establishing a benefit matrix associated with said plurality of classes, said benefit matrix defining a benefit for each said element in said dataset as applicable for each said class. (**Fan**, p166, C2:14-34)

Claim 30

Art Unit: 2129

Fan anticipates using a validation dataset to measure a validation of said model; and calculating an aggregate benefit for said model, as based on said validation dataset. (**Fan**, p169, C2:1-16; 'Aggregate benefit' of applicant is equivalent to 'total benefit' of Fan.)

#### Claim 31

Fan anticipates progressively developing an ensemble model by successively learning a model for elements in one of a remaining said N segments, wherein said progressively developing said ensemble model is terminable at any stage. (**Fan**, p166, algorithm 1 and abstract; 'Ensemble calculator' of applicant is equivalent to the outer loop of the algorithm 1 which begins with 'partition S into K disjoint subsets'. This outer loop develops the 'ensemble model' with each additional  $S_i$ . 'Terminable at any stage' of applicant is equivalent to 'user can terminate prior to completion' of Fan.)

#### Claim 32

Fan anticipates calculating at least one of an accuracy and a remaining training time for said ensemble model. (**Fan**, p163, Figure 1.)

#### Claim 33

Fan anticipates entering a threshold for at least one of said accuracy and said remaining training time; and automatically terminating said progressively developing



Art Unit: 2129

said ensemble model whenever said threshold is exceeded. (Fan, p166, 2:1-13;

'Threshold' of applicant is equivalent to 'upper and lower bounds' of Fan.)

### ***Response to Arguments***

6. Applicant's arguments filed on November 29, 2006 for claims 1-33 have been fully considered but are not persuasive.

7. In reference to the Applicant's argument:

#### **VII. ARGUMENTS**

##### **GROUND #1: THE NON-STATUTORY SUBJECT MATTER REJECTION**

##### **1. THE EXAMINER'S POSITION ON THE STATUTORY SUBJECT MATTER REJECTION**

In the Office Action mailed on February 15, 2007, the Examiner states, beginning on page 2:

"Claims 1-33 are rejected under 35 U.S.C. 101 for nonstatutory subject matter. The computer system must set forth a practical application of that § 101 judicial exception to produce a real-world result. Benson 409 U.S. at 71-72, 175 USPQ at 676-77. The invention is ineligible because it has not been limited to a substantial practical application. An inductive learning method by itself has no practical application. The result has to be a practical application. Please see the interim guidelines for examination of patent applications for patent subject matter eligibility published November 22, 2005 in the official gazette.

In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete." If the claim is directed to a practical application of the § 101 judicial exception producing a result tied to the physical world that does not preempt the judicial exception, then the claim meets the statutory requirement of 35 U.S.C. § 101.

Art Unit: 2129

Phrases such as 'inductive learning model', 'processing an inductive learning model' and 'a system to process an inductive learning model' all generate a inductive learning model but there is no stated real world practical application for such a device.

The invention must be for a practical application and either."

1) specify transforming (physical thing) or

2) have the FINAL RESULT (not the steps') achieve or produce a useful (specific, substantial, AND credible), concrete (substantially repeatable/non-unpredictable), AND tangible (real world/ non-abstract) result.

A claim that is so broad that it reads on both statutory and non-statutory subject matter, must be amended, and if the specification discloses a practical application but the claim is broader than the disclosure such that it does not require the practical application, then the claim must be amended.

Claims that recites a method or system that computes an inductive algorithm which solely calculates a mathematical response without a purpose or function is not statutory."

In the Response to Arguments section, the Examiner further states in paragraph 6 beginning on page 16 of the Office Action:

"Applicant states that the invention provides 'reduces the amount of time and cost to develop a learning model for a large database' is a practical application. Examiner agrees. The problem is this is not stated within the independent claims. If amended claims were to incorporate something similar to 'reduces the amount of time and cost to develop a learning model for a large database', this seems it would overcome the 35 U.S.C. §101 rejection."

In the Advisory Action mailed on May 3, 2007, the Examiner indicated that the rejection under 35 USC § 101 was withdrawn, based on the disclosure that the present invention had been demonstrated in the practical applications of campaign letter distributions and credit card fraud detection.

However, in the Advisory Action mailed on May 30, 2007, the Examiner indicated that the 35 USC §101 would be reinstated if an RCE were to be filed, since the Appellants had argued that there were other practical applications both known and unknown.

Therefore, it is uncertain on the record the status of the statutory subject matter rejection in the instant rejection. It is also uncertain on the record what standard is being used by the USPTO for statutory subject matter.

## 2. APPELLANTS' POSITION ON THE STATUTORY SUBJECT MATTER REJECTION

Appellants remain uncertain what exactly the Examiner is attempting to assert in this

Art Unit: 2129

rejection, since the Examiner concedes that the present invention does indeed reduce time and/or cost to develop a learning model for a large database and is, therefore, a practical application. Thus, Appellants understand the Examiner as having conceded that the present invention does indeed satisfy this requirement of statutory subject matter.

However, the Examiner then strangely added a procedural requirement, alleging that method claims must expressly articulate the practical results before the invention can be considered as directed toward statutory subject matter.

Appellants respectfully disagree, since statutory subject matter is a characteristic of the invention as a whole and is not dependent upon using special wording in the claims to describe the practical result. That is, Appellants submit that merely adding a description of the practical result to the claims, when the steps described in the claims inherently achieve this practical result, does not mysteriously convert the invention from non-statutory subject matter into statutory subject matter.

No case law has ever made such holding, nor do the new Guidelines add a procedural requirement for statutory subject matter that the claims must artificially articulate the tangible (i.e., "real world") result of the invention or offer any guidelines as to the specific wording to be used to meet such procedural requirement. Appellants understand that the test for statutory subject matter for computer method claims remains whether the claimed invention as a whole (e.g., whether the invention as implemented) provides a real world result, not whether the claims artificially recite the tangible result.

It is noted that Appellants did attempt to submit an amendment that was understood as addressing this particular art unit's understanding of the requirements for statutory subject matter, but the Examiner considered that a new issue was raised and the amendment was not entered.

It is further noted that, if it is the position of the USPTO that specific wording choice somehow distinguishes statutory subject matter, then the USPTO has the clear burden of publishing those specific claim wordings that will satisfy their understanding of statutory subject matter, rather than leaving it up to applicants to keep trying different wording until finally discovering each Examiner's personal preference for wording.

It is further noted that, relative to the reinstatement of the rejection based upon Appellants' position that there are applications both known and unknown, Appellants are not aware of any holding that defines statutory subject matter as related to the issue of specifically defining the claims to specific applications.

Appellants believe that the present invention, because it shortens the training period for databases, inherently meets the threshold requirement of statutory subject matter by

Art Unit: 2129

reason that there is no mathematical algorithm being claimed and because the method is clearly useful, concrete and tangible. That is, a database of information is clearly "real- world", as the USPTO's use of its electronic database confirms, and the shortening of a training period involving a database would, therefore, inherently be a real-world application.

Appellants also believe that attempting to compel Appellants to limit the method of the invention to the exemplary examples described in the disclosure defeats the entire purpose of obtaining a patent on the method and is not an issue related to statutory subject matter.

Therefore, Appellants request that the Board clarify the USPTO position on statutory subject matter, both in general and relative to the present invention and the present claim language. It is also respectfully requested that the Board provide specific case citations in their analysis, since there are many 101 rejections currently circulating in the USPTO that are attempts to take wording out of context of the holdings or that provide paraphrasing that has no substantive meaning.

Examiner's response:

The rejection is based on both preemption and the use of the term 'signal bearing media' neither are statutory material. Office Actions stand.

8. In reference to the Applicant's argument:

#### 1. THE EXAMINER'S POSITION ON THE ANTICIPATION REJECTION

In the first Office Action mailed on August 31, 2006, the Examiner rejected claims 1-33 as anticipated by Appellants' publication "Progressive Modeling".

In the Request for Reconsideration Under 37 CFR § 1.111, submitted on November 29, 2006, Appellants explained that this publication was Appellants' publication that occurred less than one year prior to filing the present application and, therefore, was disqualified as prior art against the application.

In the Response to Arguments section of the rejection currently of record, in paragraph 7, on page 18 of the Office Action mailed on February 15, 2007, the Examiner states: "The Examiner acknowledges the art is within the one year grace period of the filing date. The problem arises is that the inventive entity is not the same. Authors Shaw-hwa Lo and Salvatore Stolfo are not listed as inventors. Additionally both Shaw-hwa Lo and

Art Unit: 2129

Salvatore Stolfo are affiliated with Columbia University and not International Business Machine. Therefore the art 'Progressive Modeling' is valid to use."

In the Amendment Under 37 CFR § 1.116 submitted on April 16, 2007, Appellants explained that the two student names were added to the publication for benefit of their academic experience and was not indicative of the status of either authorship or co-inventorship, as indicated by having the two students' names outside the IBM names and at the end of the listing of authors of the publication, as is standard procedure for listing students on such publications where the students do not contribute to the project to be considered as co-inventors or even authors of the publication. Appellant Fan submitted a Rule 132 declaration (see Evidence Appendix) describing that neither of the two students were co-inventors.

In the Advisory Action mailed on May 3, 2007, the Examiner indicated that the Rule 132 declaration was ineffective because only one inventor was represented and because there were no words that the reference was not invented "by another" and imposed a Rule 105 requirement for additional information supporting the Appellants' position that they were the sole inventors.

In the Request for Reconsideration Under 37 CFR §1.116 filed on May 15, 2007, Appellants responded to the Rule 105 request for any prior art search information known to Appellants at the time of filing the application but declined to provide laboratory notes, and, instead, provided a second Rule 132 declaration (see Evidence Appendix) signed by two of the three co-inventors (the third co-inventor subsequently signed the declaration after returning from an illness, so the declaration was perfected on filing on June 15, 2007, of the declaration as executed by the third co-inventor). The second Rule 132 expressly states that the publication cited by the Examiner was not invented by another.

In the Advisory Action mailed on May 30, 2007, the Examiner maintained the Rule 105 requirement and disagreed with the Appellants' position on inventorship.

Thus, it appears that the Examiner seems to consider that the Appellants have failed to establish that they are sole inventors of the present invention and that Appellants have not responded to the Rule 105 requirement.

## 2. APPELLANT'S POSITION ON THE ANTICIPATION REJECTION

Appellants believe that perfecting the Rule 132 Declaration by submitting the third co-inventor's signed declaration removes the Appellants' publication as a prior art reference against the present application and that there is no additional duty to provide engineering notebooks or any other information required by the Examiner to support Appellants' declaration that the cited publication was not by another. Appellants did respond to the Examiner's Rule 105 requirement for providing any prior art search results by explaining that no prior art search had been done.

Art Unit: 2129

Therefore, Appellants believe that the filing of the second Rule 132 declaration disqualifies the cited publication as a prior art reference, thereby overcoming the anticipation rejection currently of record.

Examiner's response:

Mr. Cooperrider (Reg. No. 36769) stated on a document dated 8/15/2007 that both Mr. Shaw-hwa Lo and Mr. Salvatore Stolfo who are coauthors of the paper titled 'Progressive Modeling' and makes the statement 'appellants explained that the two students names were added to the publication for benefit of their academic experience and was not indicative of the status of either authorship or co-inventorship, as indicated by having the two students' names outside the IBM names and at the end of the listing of authors of the publication, as is standard procedure for listing students on such publications where the students do not contribute to the project to be considered as co-inventors or even authors of the publication.'

In a 'Declaration Under 37 C.F.R. §1.132' the statement was made 'I further declare that the names on these two students were added to the IEEE publication "progressive Modeling" only as a courtesy to these students for their academic record and that adding their names to this publication listing of authors was not intended in any way to signify them as co-inventors of the claimed invention.' This document was signed by Mr. Wei Fan on 6/14/2007 and by Mr. Haixun Wang and Mr. Philip S. Yu on 5/15/2007.

The problem arises that in 2002 both Mr. Shaw-hwa Lo and Mr. Salvatore Stolfo were not 'students' or even 'graduate students' but were full professors at Columbia

Art Unit: 2129

University. Therefore the Office requests how the article 'Progressive Modeling' is delineated among the five authors.

### ***Conclusion***

9. The prior art of record and not relied upon is considered pertinent to the applicant's disclosure.

- 'Distributed data mining in credit card fraud detection': Chan

- 'Metalearning for multistrategy and parallel learning': Chan

- 'JAM: Java agents for metalearning over distributed databases': Stolfo

- 'Introduction to numerical methods': Stark

- 'The world according to wavelets': Hubbard

10. Claims 1-33 are rejected.

### ***Correspondence Information***

Art Unit: 2129

11. Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner Peter Coughlan, whose telephone number is (571) 272-5990. The Examiner can be reached on Monday through Friday from 7:15 a.m. to 3:45 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor David Vincent can be reached at (571) 272-3080. Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,  
Washington, D. C. 20231;

Hand delivered to:

Receptionist,  
Customer Service Window,  
Randolph Building,  
401 Dulany Street,  
Alexandria, Virginia 22313,  
(located on the first floor of the south side of the Randolph Building);

or faxed to:

(571) 272-3150 (for formal communications intended for entry:)

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions



Art Unit: 2129

on access to Private PAIR system, contact the Electronic Business Center (EBC) at  
866-217-9197 (toll free).



Peter Coughlan

10/31/2007



DAVID VINCENT  
SUPERVISORY PATENT EXAMINER